

DESCRIPTION

TITLE OF THE INVENTION

[0001] Portable storage device with automatic lift structure

TECHNICAL FIELD

[0002] The invention involves in a portable storage device, especially a kind of portable storage device with automatic lift structure which belongs to the field of daily necessities.

BACKGROUND OF THE INVENTION

[0003] Usually, precious electronic apparatus, such as mobile phone, camera, portable video camera, etc. are put into a storage bag specially designed for the apparatus because they are of precision structure and apt to be damaged or scratched. The storage bag is often hung on the user with a belt or clamped to the user's waist or belt with a clipping device. Most of these bags are made of thick and soft materials like artificial leather, thick cotton flannel, etc. The storage space is almost of the same size as that of the apparatus so as to prevent the apparatus stored from damage or scratch. Besides, the bags are generally closed with sealing devices like covers, zippers, nylon bands, etc. lest the apparatus falls out of the bag. Storage bags or boxes of small volume are also available on market inside which cigarettes or other portable items can be placed.

[0004] However, when the user takes the item from the above-mentioned storage device, he/she needs to open the sealing device and put his/her hand into the bag. Since the storage space is almost of the same size as that of the item stored, or the bag is designed to wrap the item stored tightly, it is always hard for the user to put his/her hand into the bag for taking out the item. What is more, it is very easy to mistakenly touch the button or other parts of the bag when taking out the item.

Particularly, the user must carefully put the apparatus into the bag and shall not let go of until the apparatus reaches the bottom of the bag, failing which might damage the apparatus since it may fall onto the bottom.

BRIEF SUMMARY OF THE INVENTION

[0005] Aiming to solve the problems above, we have invented a portable storage device with automatic lift structure which is able to store the items safely and prevent the item stored from damage or scratch, and allows the user to take the item out of and put it back to the storage device rapidly.

[0006] In order to make real the above-mentioned purpose, the following technical scheme is adopted in the invention:

[0007] It is a portable storage device with automatic lift structure, including the body of the device, the upper part of which can be opened and closed, and there is a lift structure inside the body which consists of a bearing carrier and belts connected to it. The belts are respectively joined firmly with the body. The size of the bearing carrier is appropriate so as to take the item out of and put it back to the storage device conveniently. When the upper part of the body is opened, the belt drives the bearing carrier upward; when the upper part of the body is closed, the belt drives the bearing carrier downward.

[0008] The feature of the above-mentioned portable storage device with automatic lift structure is that the body of the storage device is bag, box or case.

[0009] The feature of the above-mentioned portable storage device with automatic lift structure is that the body is integrated with a lid which can seal the opening of the body with adjustable sealing device.

[0010] The feature of the above-mentioned portable storage device with automatic lift structure is that the body is connected to the two parallel sides of the

bearing carrier. The belt connects the bearing carrier vertically to the lid. Open the upper part of the body, and the lid is lifted; the belt is pulled to move, driving the bearing carrier upward. Close the upper part of the body and the lid, the belt is loosened, driving the bearing carrier downward.

[0011] The feature of the above-mentioned portable storage device with automatic lift structure is that the belt is adjustable which is connected to the two parallel sides and basal side of the bearing carrier. Open the upper part of the body, and the lid is lifted; the item carried is no longer pressed by the lid, and the belt drives the bearing carrier upward. Close the upper part of the body and the lid, the item carried is pressed by the lid, driving the belt and the bearing carrier downward.

[0012] The feature of the above-mentioned portable storage device with automatic lift structure is that the body is divided into left and right sides and they get connected at the bottom. Its top can be buckled up. The body is connected to the two parallel sides of the bearing carrier. The belt connects the bearing carrier horizontally to the middle of the two sides of the body.

[0013] The feature of the above-mentioned portable storage device with automatic lift structure is that the belt and the bearing carrier are integrated.

[0014] The feature of the above-mentioned portable storage device with automatic lift structure is that the belt and the bearing carrier are firmly joined.

[0015] The feature of the above-mentioned portable storage device with automatic lift structure is that the belt and the bearing carrier are flexibly connected with adjustable hinge.

[0016] The feature of the above-mentioned portable storage device with automatic lift structure is that the belt is made of solid material like tagboard or metal.

[0017] The feature of the above-mentioned portable storage device with automatic lift structure is that the belt is made of elastic material like nylon band.

[0018] The feature of the above-mentioned portable storage device with automatic lift structure is that the adjustable hinge is made of metal.

[0019] The feature of the above-mentioned portable storage device with automatic lift structure is that the inner wall of the body has a locating sleeve through which the belt can pass so that the belt, when driven upward and downward, is as close to the inner wall of the body as possible.

[0020] The feature of the above-mentioned portable storage device with automatic lift structure is that a band is externally attached to the body so as to hang the body on the user.

[0021] The feature of the above-mentioned portable storage device with automatic lift structure is that a clipping device is attached to the body so as to clamp the body to the waist of the user.

[0022] The feature of the above-mentioned portable storage device with automatic lift structure is that the storage device can be used to store cigarettes or other portable items.

[0023] The feature of the above-mentioned portable storage device with automatic lift structure is that the storage device can be used to store any one of the following precious electronic apparatus: mobile phone, camera or portable video camera.

[0024] The approach to using the above-mentioned portable storage device is as follows:

[0025] To put the item into the body, first open the body opening. The belt drives the bearing carrier upward, and the user can put the item into the bearing carrier with

ease. Then close the body opening so that the belt drives the bearing carrier downward, and the item shall not fall out of the storage device.

[0026] When taking out the item, first open the body opening. The belt drives the bearing carrier upward, the upper half of the item inside the bearing carrier will also be lifted out of the storage device, and the user can take out the item with ease.

BRIEF DESCRIPTION OF THE DRAWINGS

[0027] Fig. 1 is the structure diagram of the application example 1 of the invention.

[0028] Fig. 2 is the structure diagram of the application example 1 (when the lid is closed) of the invention.

[0029] Fig. 3 is the structure diagram of the application example 1 (when the lid is opened) of the invention.

[0030] Fig. 4 is the structure diagram of the application example 2 of the invention.

[0031] Fig. 5 is the structure diagram of the application example 2 (when the lid is closed) of the invention.

[0032] Fig. 6 is the structure diagram of the application example 2 (when the lid is opened) of the invention.

[0033] Fig. 7 is the structure diagram of the application example 3 of the invention.

[0034] Fig. 8 is the structure diagram of the application example 3 (when the body is closed) of the invention.

[0035] Fig. 9 is the structure diagram of the application example 3 (when the body is opened) of the invention.

[0036] Fig. 10 is the back view of the application example 3 of the invention.

[0037] Fig. 11 is the structure diagram of the application example 4 of the invention.

[0038] Fig. 12 is the structure diagram of the application example 4 (when the body is closed) of the invention.

[0039] Fig. 13 is the structure diagram of the application example 4 (when the body is opened) of the invention.

[0040] Fig. 14 is the structure diagram of the application example 5 of the invention.

[0041] Fig. 15 is the structure diagram of the application example 5 (when the lid is closed) of the invention.

[0042] Fig. 16 is the structure diagram of the application example 5 (when the lid is opened) of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0043] The invention is described in detail with the attached diagrams and specific application examples as follows:

[0044] Fig. 1 to Fig. 3 show the application example 1 of the invention.

Application example 1 is concerned with a small portable bag used to store camera, including the bag body 1 the top of which can be opened and closed. The upper of the body is integrated with lid 11. As shown in Fig. 2, when lid 11 is closed, it covers the opening of body 1 to prevent the camera from falling out of the bag. There is a lift structure inside body 1. The lift structure consists of bearing carrier 2 integrated with belt 3 both of which are made of elastic band. Belt 3 is firmly joined with the internal edges of the two sides of lid 11, vertically connecting bearing carrier 2 with lid 11.

The inner walls of two sides of body 1 have a locating sleeve 4 through which belt 3 can pass so that belt 3, when driven upward and downward, is as close to the inner wall of body 1 as possible, enabling bearing carrier 2 to smoothly go up and down vertically. The size of bearing carrier 2 is just the same as that of the camera so that

the user can take out and put back the camera with ease. There is a clipping device (not shown in the diagram) attached to the back of body 1 so as to clamp the body to the waist or belt of the user. As shown in Fig.3, open lid 11, and then pull belt 3 which drives bearing carrier 2 upward. The upper half of the camera inside bearing carrier 2 will also be lifted out of body 1, and the user can take the item out with ease; or the empty bearing carrier 2 is lifted upward, and the user only needs to put the camera into bearing carrier 2 with little effort. The camera will be automatically supported by the bottom of bearing carrier 2 so that the user can quickly and safely take out and put back the camera with ease. As shown in Fig.2, close lid 11, release belt 3, and it will bring bearing carrier 2 downward to its original position.

[0045] Fig. 4 to Fig. 6 show the application example 2 of the invention. Its structure is basically the same as that of application example 1, so it is not repeated here. The difference of the two lies in that the lift structure of application example 2 consists of bearing carrier 2 and belt 3 both of which are made of tagboard. Belt 3 has a long hole serving as sliding slot. There is a convex buckle made of metal on top of bearing carrier 2. The top width of the convex buckle is slightly bigger than that of the sliding slot while its neck width is slightly smaller than that of the sliding slot. The convex buckle slides up and down in the sliding slot, and flexibly connects belt 3 with bearing carrier 2. Bearing carrier 2 can move up and down along the long hole of belt 3. As shown in Fig. 6, open lid 11, and then pull belt 3. The convex buckle of bearing carrier 2 moves up along the long hole of belt 3, driving bearing carrier 2 upward so that the user can take out or put into the item with ease. As shown in Fig.5, close lid 11, belt 3 moves downward, the convex buckle of bearing carrier 2 moves along the long hole of belt 3 back to its original position, driving bearing carrier 2 downward to its original position.

[0046] Fig. 7 to Fig. 10 show the application example 3 of the invention.

Application example 3 is applicable to storage of camera as well. It is a portable box including body 1 with left and right sides, the bottom of which is joined and the top of which can be buckled up. There is a lift structure inside body 1. The lift structure is made of elastic material, which consists of bearing carrier 2 and two belts 3, two sides of bearing carrier 2 being firmly joined with the two belts 3. The two ends of belt 3 are respectively connected to the left and right internal edges of body 1. The two belts 3 connect bearing carrier 2 to the center inside the body. Bearing carrier 2 is almost of the same size as that of the camera so as to take out or put into the camera with ease. As shown in Fig. 10, there is a band 5 on the back of body 1 so as to hang body 1 to the user. As shown in Fig. 9, open the top of body 1 which can be buckled up, and then pull belt 3 which drives bearing carrier 2 upward. The camera inside bearing carrier 2 will also be lifted, and the user can take out the camera with ease; or the empty bearing carrier 2 is lifted upward, and the user only needs to put the camera into bearing carrier 2 with little effort. The camera will be automatically supported by the bottom of bearing carrier 2 so that the user can quickly and safely take out and put back the camera with ease. As shown in Fig. 7 and Fig. 8, close the top of body 1 which can be buckled up, release belt 3, and it will bring bearing carrier 2 downward to its original position.

[0047] Fig. 11 to Fig. 13 show the application example 4 of the invention. Its structure is basically the same as that of application example 3, so it is not repeated here. The difference of the two lies in that the lift structure of application example 4 consists of bearing carrier 2 and two belts 3, two sides of bearing carrier 2 being firmly joined with the two belts 3. The two belts 3 are respectively connected to the left and right internal edges of body 1. The two belts 3 are flexibly connected to each

other with a hinge. The two belts 3 connect bearing carrier 2 horizontally to the center inside the body. As shown in Fig. 11 and Fig. 13, open the top of body 1 which can be buckled up, and then stretch two belts 3 to form the shape of “—”, which drives bearing carrier 2 upward so that the user can take out or put in the item with ease. As shown in Fig. 12, close the top of body 1 which can be buckled up, release belt 3 to form the shape of “V”, and it will bring bearing carrier 2 downward to its original position.

[0048] Fig. 14 to Fig. 16 show the application example 5 of the invention. Application example 5 is concerned with a small portable bag used to store camera, including bag body 1 the top of which can be opened and closed. The upper of the body is integrated with lid 11. As shown in Fig. 15, when lid 11 is closed, it covers the opening of body 1 to prevent the camera from falling out of the bag. There is a lift structure inside body 1. The lift structure consists of bearing carrier 2 made of soft cloth integrated with belt 3 made of elastic band. Belt 3 is firmly joined with the front, back and bottom of bearing carrier 2 as well as with the internal edges of the two sides of body 1, vertically connecting bearing carrier 2 with body 1. The size of bearing carrier 2 is almost the same as that of the camera so that the user can take out and put back the camera with ease. There is a clipping device (not shown in the diagram) attached to the back of body 1 so as to clamp the body to the waist or belt of the user. As shown in Fig. 16, open lid 11, the camera is no longer pressed by lid 11, and belt 3 drives bearing carrier 2 upward. The upper half of the camera inside bearing carrier 2 will also be lifted out of body 1, and the user can take out the camera with ease; while the empty bearing carrier 2 is already placed at the lifting position (not shown in the diagram). The user only needs to put the camera into bearing carrier 2 with little effort. The camera will be automatically supported by the

bottom of bearing carrier 2 so that the user can quickly and safely take out and put back the camera with ease. As shown in Fig. 15, close lid 11, the camera is pressed by lid 11, driving belt 3 and bearing carrier 2 downward.

INDUSTRIAL APPLICABILITY

[0049] The invention, a portable storage device with automatic lift structure, can safely keep items and prevent them from damage and scratch. It enables the user to take out and put back items quickly. Its belt, when the user opens the body, will drive the bearing carrier upward, making it convenient for the user to put the item into the bearing carrier. When the user closes the body, the belt will bring the bearing carrier downward so that the item is prevented from falling out of the storage device.